

DRAFT

Active Atmospheric Limb Sounding With an Orbiting GPS Receiver

R Ware, C Rocken (both at: UNAVCO, Boulder, CO 80307; 303497-8005, -8012; ware@unavco.ucar.edu, rocken@unavco.ucar.edu)

M Exner (UCAR, Boulder, CO 80307; 303 497-2601; mike_exner@qgate.ucar.edu)

B Herman (University of Arizona, Tucson, AZ 85721; 602 621-6846; herman@atmo1.atmo.arizona.edu)

W Kuo (NCAR, Boulder, CO 80307; 303 497-8910; kuo@ncar.ucar.edu)

T Meehan (JPL, Pasadena, CA 91109; 818 393-6226)

We intend to demonstrate active limb sounding of the atmosphere using an orbiting Global Positioning System (GPS) receiver. Phase shifts in GPS signals transecting the atmosphere will be detected by the orbiting receiver, Active limb sounding data will be converted into vertical refractivity, temperature, and humidity profiles. One kilometer vertical resolution from 50 km to the surface, sub-Kelvin temperature accuracy in the lower stratosphere, and hundreds of soundings per day are expected. Launch of the spacecraft is planned for February 1994. The data set will be made available for weather, climate, geodetic, and other research. The *GPS/MET* program is being conducted by scientists at the University Navstar Consortium (UNAVCO), the University Corporation for Atmospheric Research (UCAR), the National Center for Atmospheric Research (NCAR), the Jet Propulsion Laboratory (JPL) and the University of Arizona, with participation by Orbital Sciences Corporation and Allen Osborne Inc. The program is sponsored by the NSF, NOAA, and the FAA.

1. 1993 Fall Meeting

2. 003375311

3. R H Ware
UNAVCO
POB 3000
Boulder, CO 80307

(b) Tel: 303497-8005

(c) Fax: 303497-8028

4. A

5. (a) None

(b) 0340 Middle atmosphere -
composition and chemistry
0350 Pressure, density, and
temperature
0365 Troposphere - composition
and chemistry
0394 Instruments and techniques

(c) Climate and Global Change

6. No

7. None

8. Charge \$50 to R Ware
Visa Expires 8/94

9. c

10. No

11. No